CLAIMS

What is claimed is:

1. A dietary supplement composition, comprising freeze-dried *Euterpe edulis* (Jucara) fruit pulp, wherein the composition:
   (a) comprises a total anthocyanin concentration greater than about 1 milligram per gram total weight;
   (b) has an $ORAC_{FL}$ value greater than about 350 micromole TE per gram total weight; and
   (c) has a residual water content less than about 3 weight percent of the total weight.

2. A dietary supplement composition, comprising freeze-dried Jucara fruit pulp, wherein the composition:
   (a) has a cyclooxygenase inhibition value greater than about 15 Aspirin® mg equivalent per gram total weight; and
   (b) has a residual water content less than about 3 weight percent of the total weight.

3. The composition of claim 1 or 2, wherein the dietary supplement composition further comprises a pharmaceutically acceptable carrier.

4. A method of producing a stable and palatable Jucara-based dietary supplement composition, the method comprising the steps of:
   (a) harvesting Jucara fruits;
   (b) weighing the Jucara fruits;
   (c) cleaning the Jucara fruits with water;
   (d) washing the Jucara fruits with water at a temperature of about 75°C to 100°C for a period of time of about 5 seconds to 10 minutes;
   (e) hulling the Jucara fruits to isolate a Jucara fruit pulp from the Jucara fruits;
   (f) freezing the Jacara fruit pulp to a temperature less than about -5°C; and
   (g) freeze-drying the Jucara fruit pulp under conditions to yield a granular, freeze-dried Jucara fruit pulp powder with a residual water content of less than 3 weight percent;
   wherein the freeze-dried Jucara fruit pulp powder is more stable and palatable than an Jucara pulp preparation.

5. The method of claim 4, wherein the cleaning step consists of cleaning the Jucara fruits with hygienic water at 0.1% (v/v).

6. The method of claim 4, wherein the washing step consists of washing the Jucara fruits in water at a temperature of about 80°C for a period of time of about 10 seconds.

7. The method of claim 4, wherein the hulling step consists of mechanically hulling the Jucara fruits for a time period of between about 2 minutes to 5 about minutes and the hulling step is carried out using about 1 liter of water per 2 kg of Jucara fruits.

8. The method of claim 4, wherein the Jucara-based dietary supplement composition has an $ORAC_{FL}$ value of greater than about 350 micromole TE per gram total weight.

9. The method of claim 4, wherein the Jucara-based dietary supplement composition has a cyclooxygenase inhibition value greater than about 15 Aspirin® mg equivalent per gram total weight.

10. A method of preventing or treating a disease or an injury induced by pathological free radical reactions in a mammal, the method comprising administering to the mammal an effective amount of the Jucara-based dietary supplement composition of any one of claims 1-3, wherein the composition quenches free radicals and reduces the damage induced by pathological free radicals.

11. The method of claim 10, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.

12. A method for alleviating the deleterious effects of pathological free radical reactions in a mammal afflicted with a disease or an injury induced by pathological free radical reactions in a mammal, the method comprising administering to the mammal an effective amount of the Jucara-based dietary supplement composition of any one of claims 1-3, wherein the composition quenches free radicals and reduces the damage induced by pathological free radicals.

13. The method of claim 12, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.

14. A method of inhibiting cyclooxygenase enzyme activity in a mammal, the method comprising administering to the mammal an effective amount of a composition comprising the Jucara-based dietary supplement composition of any one of claims 1-3.

15. The method of claim 14, wherein the composition further comprises a pharmaceutically acceptable carrier.

16. The method of claim 14, wherein the composition is administered by a route of administration selected from the group consisting of: oral, intravenous, intraperitoneal, subcutaneous, intramuscular, intraarticular, intraarterial, intracerebral, intracerebellar, intrabronchial, intrathecal, topical, and aerosol route.

17. A method of preventing or treating a disease or an injury associated with increased cyclooxygenase enzyme activity in a mammal, the method comprising administering to the mammal an effective amount of a composition comprising the Jucara-based dietary supplement composition of any one of claims 1-3.

18. The method of claim 17, wherein the composition further comprises a pharmaceutically acceptable carrier.

19. The method of claim 17, wherein the composition is administered by a route of administration selected from the group consisting of: oral, intravenous, intraperitoneal, subcutaneous, intramuscular, intraarticular, intraarterial, intracerebral, intracerebellar, intrabronchial, intrathecal, topical, and aerosol route.

20. The method of claim 17, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.

21. A dietary supplement composition, comprising freeze-dried *Euterpe oleracea* (Açai) fruit pulp, wherein the composition:
    (a) comprises a total anthocyanin concentration greater than about 1 milligram per gram total weight;
    (b) has an $ORAC_{FL}$ value greater than about 350 micromole TE per gram total weight; and
    (c) has a residual water content less than about 3 weight percent of the total weight.

22. A dietary supplement composition, comprising freeze-dried Açai fruit pulp, wherein the composition:
    (a) has a cyclooxygenase inhibition value greater than about 15 Aspirin® mg equivalent per gram total weight; and
    (b) has a residual water content less than about 3 weight percent of the total weight.

23. The composition of any one of claim 21 or 22, wherein the dietary supplement composition further comprises a pharmaceutically acceptable carrier.

24. A method of producing a stable and palatable Açai-based dietary supplement composition, the method comprising the steps of:
    (a) harvesting Açai fruits;

(b) weighing the Açai fruits;

(c) cleaning the Açai fruits with water;

(d) washing the Açai fruits with water at a temperature of about 75°C to 100°C for a period of time of about 5 seconds to 10 minutes;

(e) hulling the Açai fruits to isolate a Açai fruit pulp from the Açai fruits;

(f) freezing the Açai fruit pulp to a temperature less than about -5°C; and

(g) freeze-drying the Açai fruit pulp under conditions to yield a granular, freeze-dried Açai fruit pulp powder with a residual water content of less than 3 weight percent;

wherein the freeze-dried Açai fruit pulp powder is more stable and palatable than an Açai pulp preparation.

25. The method of claim 24, wherein the cleaning step consists of cleaning the Açai fruits with hygienic water at 0.1% (v/v).

26. The method of claim 24, wherein the washing step consists of washing the Açai fruits in water at a temperature of about 80°C for a period of time of about 10 seconds.

27. The method of claim 24, wherein the hulling step consists of mechanically hulling the Açai fruits for a time period of between about 2 minutes to 5 about minutes and the hulling step is carried out using about 1 liter of water per 2 kg of Açai fruits.

28. The method of claim 24, wherein the Açai-based dietary supplement composition has an $ORAC_{FL}$ value of greater than about 350 micromole TE per gram total weight.

29. The method of claim 24, wherein the Açai-based dietary supplement composition has a cyclooxygenase inhibition value greater than about 15 Aspirin® mg equivalent per gram total weight.

30. A method of preventing or treating a disease or an injury induced by pathological free radical reactions in a mammal, the method comprising administering to the mammal an effective amount of the Açai-based dietary supplement composition of any one of claims 21-23, wherein the composition quenches free radicals and reduces the damage induced by pathological free radicals.

31. The method of claim 30, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.

32. A method for alleviating the deleterious effects of pathological free radical reactions in a mammal afflicted with a disease or an injury induced by pathological free radical reactions in a mammal, the method comprising administering to the mammal an effective amount of the Açai-based dietary

supplement composition of any one of claims 21-23, wherein the composition quenches free radicals and reduces the damage induced by pathological free radicals.

33. The method of claim 32, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.

34. A method of inhibiting cyclooxygenase enzyme activity in a mammal, the method comprising administering to the mammal an effective amount of a composition comprising the Açai-based dietary supplement composition of any one of claims 21-23.

35. The method of claim 34, wherein the composition further comprises a pharmaceutically acceptable carrier.

36. The method of claim 34, wherein the composition is administered by a route of administration selected from the group consisting of: oral, intravenous, intraperitoneal, subcutaneous, intramuscular, intraarticular, intraarterial, intracerebral, intracerebellar, intrabronchial, intrathecal, topical, and aerosol route.

37. A method of preventing or treating a disease or an injury associated with increased cyclooxygenase enzyme activity in a mammal, the method comprising administering to the mammal an effective amount of a composition comprising the Açai-based dietary supplement composition of any one of claims 21-23.

38. The method of claim 37, wherein the composition further comprises a pharmaceutically acceptable carrier.

39. The method of claim 37, wherein the composition is administered by a route of administration selected from the group consisting of: oral, intravenous, intraperitoneal, subcutaneous, intramuscular, intraarticular, intraarterial, intracerebral, intracerebellar, intrabronchial, intrathecal, topical, and aerosol route.

40. The method of claim 33, wherein the disease or injury is selected from the group consisting of: cancer, colon cancer, breast cancer, inflammatory bowel disease, Crohn's disease, vascular disease, arthritis, ulcer, acute respiratory distress syndrome, ischemia-reperfusion injury, neurodegenerative disorders, autism, Parkinson's Disease, Alzheimer's Disease, gastrointestinal disease, tissue injury induced by inflammation, and tissue injury induced by an environmental toxin.